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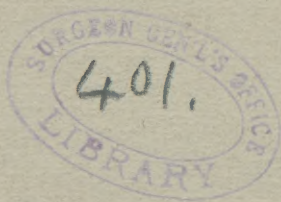
Arthritis complicating Vulvo-  
Vaginal Inflammation  
in Children.

BY

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REPRINTED FROM

The New York Medical Journal  
*for June 21, 1890.*





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## ARTHRITIS COMPLICATING

### VULVO-VAGINAL INFLAMMATION IN CHILDREN.\*

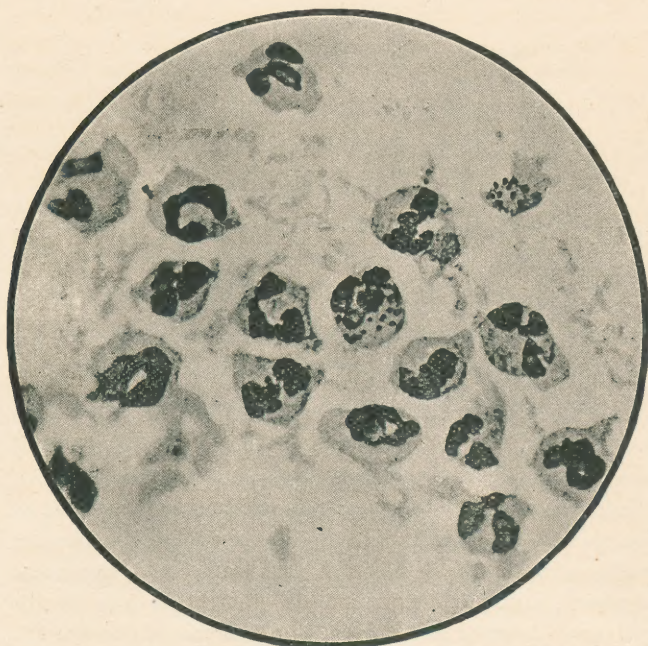
By HENRY KOPLIK, M. D.

THAT form of arthritis which I wish to illustrate with a short *résumé* of two cases belongs to a class of joint affections the exact pathology of which at the present day is not entirely within the domain of the solved problems of medicine. Their counterpart first came to the notice of clinicians who were in the habit of studying catarrhal or purulent affections of the urethra in the male or the urethra and vagina in the female. I learn from Loeb (*Deutsches Archiv f. klin. Med.*, xxxviii, 1885) that Seele and Swediaur first observed an arthritis which complicated a specific catarrh of the urethra. Hunter, Ricord, Foucart, and Brandes in turn made additional observations tending to confirm the above. Thiry, of Brussels, thought these articular affections mere incidental occurrences not in any way connected with the urethral or vaginal disease. Foucart, Brandes, Rollet, and Christensen have never met arthritis complicating catarrhal processes of a specific nature in the adult female.

\* Read before the Section in Pædiatrics of the New York Academy of Medicine, March 13, 1890.



In children, arthritis complicating or concomitant with specific catarrh of the vagina or vulva is to-day a disease unstudied, yet, on account of its rarity, not less interesting.



The gonococci in the vaginal discharge in Case II, stained with methyl violet and partially decolorized with alcohol. Zeiss apochromatic-lens projection, ocular 4,  $\times 1,000$ . The author is indebted for the microphotograph to Dr. Cunningham, house physician to Mount Sinai Hospital.

CASE I. *November 30, 1888.*—Female child, aged five years, has suffered in the past from measles, pertussis, and pneumonia; mother and father in good health. Two weeks ago a mucopurulent discharge became noticeable at the vulva; this discharge has persisted. About a week ago the patient complained of some uneasiness (as she termed it) in the præcordial

region; pain in the right shoulder and wrist. The shoulder has continued painful since. Three days ago the mother says the patient complained of pain in the right knee, which has become more marked.

*Status.*—The patient is an ill-nourished, anæmic child, showing the signs of partial neglect. Upon examination, the right shoulder is very painful, but not swollen or raised in temperature. The right wrist is in the same condition. The right knee is swollen, painful, and the temperature of the joint feels raised to the touch. There is an evident effusion into the joint, a fluctuating swelling above and to either side of the ligamentum patellæ. Patient can walk only with the greatest difficulty.

There is a thick, greenish-yellow vaginal and vulvar discharge. Heart negative. Temperature  $102^{\circ}$  in the rectum. There is some loss of appetite, and malaise.

*December 3d.*—The swelling of the knee has somewhat subsided; the pain in the shoulder has disappeared. The knee is still painful. Discharge from the vulva persists, with ardor urinæ.

The patient passed from my observation when the joint trouble had subsided so as to allow her to walk with comfort, probably dissatisfied at the futility of treatment directed to the vaginal discharge.

An examination of the discharge from the vulva and scrapings from the vagina (this latter in order to obtain the pus) showed, as above, a thick, viscid, mucoid discharge, greenish-yellow in tint, containing pus cells, vaginal epithelium, with cocci and diplococci. In the cell body of the pus cells the diplococci were present and characteristic. These organisms answered in every way, as far as staining could show, to the descriptions of the gonococcus of Neisser.

CASE II. *March 25, 1889.*—Female child, aged three years and a half. Three weeks ago the guardian of the little patient noticed a yellow discharge from the vulva; this discharge has persisted since; there has been loss of appetite and failing health. A week ago the guardian noticed that there were swelling, redness, and pain in the right ankle. These symptoms became so marked that at the time of consultation the little

one was unable to walk and had to be carried. No history of a traumatism.

*Status.*—The child is anæmic, of delicate build, no signs of rhachitis, no syphilis, no lung trouble or glandular enlargements, no fever. There is a muco-purulent discharge from the vulva, with crusty formations upon the external parts. The right ankle is swollen and the skin over the joint is tense, and there is a red blush over the joint. There is some rise in the external temperature of the joint. Manipulation of the joint is very painful. There are no signs of fluid in the joint.

*March 27th.*—Vulvar discharge much the same. The ankle joint is not so red or painful. Now, inasmuch as the patient bears manipulation, it can be seen that in both ankles there is quite a degree of laxity, or rather weakness, of the ligaments; but later on, when the affected joint had recovered from its acute affection, this laxity of the ligaments of the ankle joint appeared not to seriously incommode the patient. With a reinforced shoe she showed no signs of any congenital weakness of the joint.

*April 1st.*—Joint still stiff. Patient walks, though stiffly. Discharge from the vagina and vulva still present, though of diminished intensity.

The joint finally made such a complete recovery that neither the guardian nor myself could have believed that any trouble had existed had we not observed the affection from the outset. In about the fourth week, however, of my treatment of the affection the little patient, through some carelessness, contracted a severe blennorrhœal conjunctivitis in both eyes, and, fearing lest the integrity of the patient's eyesight would be compromised, I advised immediate transfer to an eye infirmary, which was done. Here I lost sight of my case. Examination of the genital discharge in this as in the first case revealed diplococci singly and in pairs and groups in the mucus and in the pus cells. They answered in stain and grouping to the descriptions of the gonococcus of Neisser.

I regret that in both cases I failed to make serum cultures, and in this respect I fully appreciate that the report



must be imperfect. Inasmuch as the cases occurred in dispensary practice, I did not, for very patent reasons, attempt so serious a procedure as the aspiration of joint fluid.

In the two cases detailed above every one will admit that the genital discharge was specific. The joint complications are unique, however, and I have searched the literature, but find no similar cases recorded. There are two authors—Widmark (*Jahrb. f. Kinderheilk.*, 1886, p. 157) and A. Jacobi, of New York (*Med. Rec.*, vol. xxxiv, p. 23)—both of whom have observed arthritis in children complicating conjunctivitis possibly of a gonorrhœal character, but, although the later literature teems with advices and notices upon the specific nature of a percentage of cases of vulvo-vaginal inflammation in children (Fraenkel, Sanger, Spaeth, Pott, Prochownik, Israel), none of these men have met arthritis as a complication. Granted that extraneous ætiological factors have been carefully excluded in these cases and that the possibility of a long latent tuberculosis unobserved has been duly considered, how shall we classify two cases as recorded above? We must bring them into that rubric which contains all those joint affections complicating specific catarrh and consider them according to our present knowledge on this subject.

Since Bumm demonstrated the truth of the discovery by Neisser of a specific micro-organism as the cause of gonorrhœa, the complications of this affection have been subjected to renewed speculation and study. Very early in the history of these affections it was naturally concluded that this organism must be held as the direct cause of the complicating diseases. But there are insurmountable obstacles in the path of such an assumption. To-day the only well-established fact in the mode of growth of the gonococcus of Neisser seems to be that it propagates itself only by means of epithelial surfaces. To conclude that the

arthritis met in some forms of gonorrhœa is due to the direct influence of these micro-organisms (metastatic), though very simple, remains to-day among the unproved theses of modern bacteriology. The gonococcus does not circulate in the blood. There are those, like Brieger and Ehrlich, both of undoubted ability, who, after careful study, deny the presence of the gonococcus in joint effusions complicating gonorrhœa, either of the urethra or vagina. Petrone and Kammerer (*Contrib. für Chir.*, 1884, p. 48) relate cases in which they have discovered the diplococcus in joint effusions in both the male and female. Kammerer questions the investigations of Brieger and Ehrlich as to the presence of the micro-organism of Neisser in joint effusions, and states that the joint fluids should be examined very soon after infection of the urethra—three to five days. If this be done, they can be easily demonstrated. It is an ungrateful task to criticise the work of others, but in a true spirit of investigation I beg to say that I have carefully looked into the work of Kammerer in the two cases above mentioned, and find only the statement of the presence of diplococci; these were found simply free, not in the pus cells, and there were no cultures made. Might they not have been diplococci of another kind, entirely differing from the gonorrhœal micro-organism? For the present, Brieger, Ehrlich, Baumgarten, and Sänger support the ground that the gonococcus has not as yet been studied and found in the blood or lymph channels, nor in the above-mentioned joint effusions. How are we then to regard these joint troubles? The only solution is that given by Bumm and Baumgarten, who would regard them as the result of a mixed pyogenic infection, thus explaining to some extent why arthritis does not complicate every case of specific catarrh.

In connection with the subject of rheumatoid affections and mixed infections in infants who are suffering from any



disease due to the influences of the gonococcus or the micro-organisms of erysipelas (blennorrhœal ophthalmia or erysipelas), I desire to add the following: \*

A female infant, three months and a half old, nursing at the breast, was vaccinated on the left arm. The vaccine pustule, in active suppuration, was opened by a traumatism. Necrosis of tissue to an extreme degree followed, with a very red and angry-looking areola spreading toward the elbow on the extensor side of the arm, and with fever. On the day after the first visit the pustule was still suppurating, but the ulcer was cleaner. The child had very marked swelling of the left knee; it was twice as large as its fellow, red, and very painful to the touch, and when movements of the joint were made there seemed to be some effusion. The mother had noticed the swelling during the previous night. The knee was put up in an immobilizing splint by Dr. W. W. Van Arsdale, which was removed after two days, as the knee was smaller than at first. The joint was still painful, red, and of heightened temperature; the vaccine pustule was healing kindly, and the blush around its base was subsiding. The knee symptoms improved from this time onward, together with the vaccine pustule and ulceration; but at the present time (a week afterward) the joint is still painful. This patient made a complete recovery.

Here we have a typical case of joint trouble due in great probability to infection of the structures of the joint by the micro-organisms playing the active destructive rôle about the vaccine lesion.

It certainly will not be encroaching too much upon your indulgence if I call attention to the excellent researches of Gerhardt (*Charité Annalen*, vol. xiv) upon the rheumatoid affections of the joints. In this essay five cases of arthritis are mentioned occurring in girls from eighteen to twenty-seven years of age, at the time suffering from gonorrhœa.

\* Read before the Medical Society of the County of New York, May 28, 1888.

The knee, hand, elbow, and shoulder were most frequently affected. In fact, the so-called gonorrhœal rheumatism affects a predilection for the knee joint that is most striking. Other peculiarities of this malady are its resistance to treatment, the freedom of the heart from any complication, absence of fever or only a low fever, and the uselessness of ordinary remedies. There are four forms of this disease—the bilateral knee dropsy; the subacute affection of many joints; the monarticular form, which, in very rare cases, results in suppuration (Koenig and Gerhardt); and, lastly, that form which can in no way be distinguished from acute articular rheumatism except in the demonstration of gonococci. (Gerhardt does not specify whether the gonococci should be demonstrated in the joint or urethra.) In the cases which I have presented, it may be said that the joint affections, though causing painful symptoms, were in no way formidable or intractable; the larger joints were affected, and the little patients, under rest with ordinary remedies, recovered within a reasonably short space of time—two weeks in one case. In this respect my cases differed from adult cases, in which the disease may be prolonged.

The frequency of this complication of vulvar inflammation must be rare, as seen from the fact that the above cases were met in a material of one hundred children, all below the age of ten years, who were suffering from vulvo-vaginal inflammation. The parts being very small in these patients, it is impossible to give reliable data as to the involvement of the urethra. In concluding, I beg to call attention to the fact that I have avoided as much as possible the term “gonorrhœal rheumatism,” inasmuch as I believe that, though it so happens that most of these forms of arthritis have been described as complicating specific catarrh of the genital passages, yet this arthritis may complicate other severe sup-

purations, as illustrated by the case of the infant at the breast, and that Bumm, in attributing this disease to a pyogenic infection independent of any immediate connection with the gonococcus, has probably taken a step in advance toward elucidating the pathology of these joint affections.













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